

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): An electrophotographic photoconductor, comprising:
an electroconductive substrate; and
a photoconductive layer on or above the electroconductive substrate, the
photoconductive layer comprising:
a cross-linked surface layer which comprises:
a cured tri- or more-functional radical polymerizable monomer without having
a charge transporting structure; and
a cured mono-functional radical polymerizable compound having a charge
transporting structure,
wherein the cross-linked surface layer has an elastic displacement rate τ_e of 35% or
more and a standard deviation of the elastic displacement rate τ_e of 2% or less; and
the cured mono-functional radical polymerizable compound having a charge
transporting structure has a functional group selected from the group consisting of an
acryloyloxy group, a methacryloyloxy group and a vinyl group.

Claim 2 (Original) An electrophotographic photoconductor according to Claim 1,
wherein the cured tri- or more-functional radical polymerizable monomer without having a
charge transporting structure has a functional group selected from the group consisting of an
acryloyloxy group and a methacryloyloxy group.

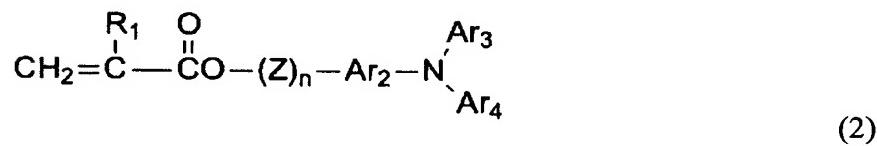
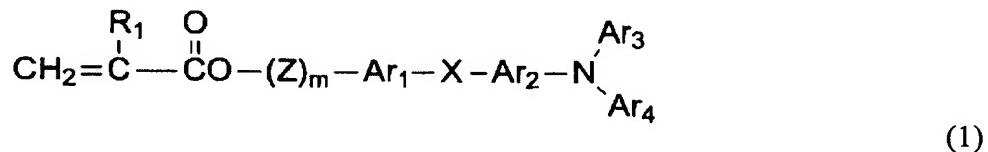
Claim 3 (Original) An electrophotographic photoconductor according to Claim 1,
wherein the cured tri- or more-functional radical polymerizable monomer without having a
charge transporting structure has a ratio (molecular weight/number of functional group) of

molecular weight to the number of functional group of 250 or less.

Claim 4 (Cancelled).

Claim 5 (Original) An electrophotographic photoconductor according to Claim 1, wherein the charge transporting structure of the cured mono-functional radical polymerizable compound having a charge transporting structure is a triarylamine structure.

Claim 6 (Currently Amended) An electrophotographic photoconductor according to Claim 1, wherein the cured mono-functional radical polymerizable compound having a charge transporting structure is represented by one of the formulae (1) and (2):



wherein, R₁ represents a hydrogen atom or a methyl group, a halogen atom, an alkyl group which may be substituted, an aralkyl group which may be substituted, an aryl group which may be substituted, a cyano group, a nitro group, an alkoxy group, COOR₇ (R₇ represents a hydrogen atom, an alkyl group which may be substituted, an aralkyl group which may be substituted or an aryl group which may be substituted), a halogenated carbonyl group

or CONR_8R_9 (R_8 and R_9 represent a hydrogen atom, a halogen atom, an alkyl group which may be substituted, an aralkyl group which may be substituted or an aryl group which may be substituted, which may be identical or different);

Ar_1 and Ar_2 represent a substituted or unsubstituted arylene group, which may be identical or different;

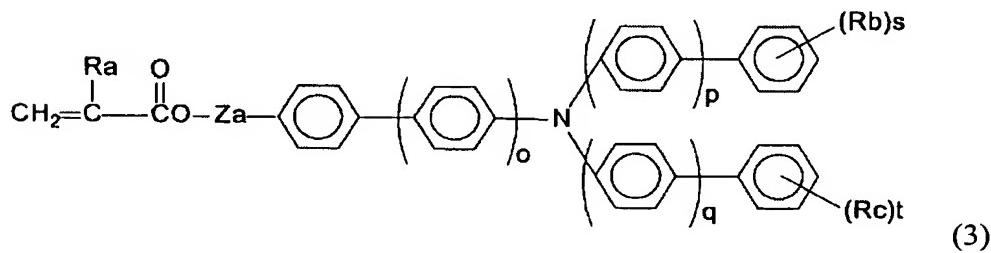
Ar_3 and Ar_4 represent a substituted or unsubstituted aryl group, which may be identical or different;

X represents a single bond, a substituted or unsubstituted alkylene group, a substituted or unsubstituted cycloalkylene group, a substituted or unsubstituted alkylene ether group, a oxygen atom, a sulfur atom or a vinylene group;

Z represents a substituted or unsubstituted alkylene group, a substituted or unsubstituted alkylene ether group or an alkyleneoxycarbonyl group; and

" m " and " n " represent an integer of 0 to 3.

Claim 7 (Original) An electrophotographic photoconductor according to Claim 1, wherein the cured mono-functional radical polymerizable compound having a charge transporting structure is represented by the following formula (3):



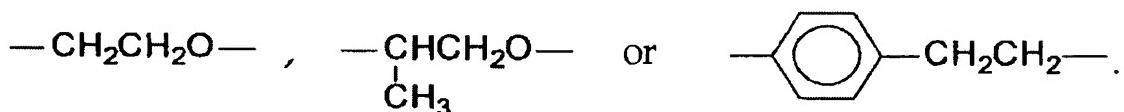
wherein, " o ," " p " and " q " each represent an integer of 0 or 1;

Ra represents a hydrogen atom or a methyl group;

Rb and Rc represent an alkyl group having 1 to 6 carbon atoms, wherein each of Rb and Rc may be different when there are two or more Rb and Rc, respectively;

"s" and "t" represent an integer of 0 to 3; and

Za represents a single bond, a methylene group, an ethylene group,



Claim 8 (Original) An electrophotographic photoconductor according to Claim 1, wherein the cured tri- or more-functional radical polymerizable monomer without having a charge transporting structure is 30% to 70% by weight, based on the total amount of the cross-linked surface layer.

Claim 9 (Original) An electrophotographic photoconductor according to Claim 1, wherein the cured mono-functional radical polymerizable compound having a charge transporting structure is 30% to 70% by weight, based on the total amount of the cross-linked surface layer.

Claim 10 (Original) An electrophotographic photoconductor according to Claim 1, wherein the photoconductive layer comprises:

a charge generation layer;

a charge transport layer; and

the cross-linked surface layer laminated on or above the electroconductive substrate in

this order.

Claim 11 (Original) An electrophotographic photoconductor according to Claim 10, wherein the charge transport layer comprises a polymer charge transport material.

Claim 12 (Original) An electrophotographic photoconductor according to Claim 11, wherein the polymer charge transport material is a polycarbonate having a triarylamine structure in the main chain or side chain thereof.

Claim 13 (Original) An electrophotographic photoconductor according to Claim 1, wherein the cross-linked surface layer is cured by one of heating and light irradiation.

Claim 14 (Original) An electrophotographic photoconductor according to Claim 10, wherein the cross-linked surface layer has a thickness of from 1 μm to 10 μm .

Claim 15 (Original) An electrophotographic photoconductor according to Claim 10, wherein the thickness is from 2 μm to 8 μm .

Claim 16 (Original) An electrophotographic photoconductor according to Claim 10, wherein the cross-linked surface layer is insoluble in an organic solvent.

Claim 17 (Currently Amended) An electrophotographic photoconductor, comprising:
an electroconductive substrate;
a charge generation layer;
a charge transport layer; and

a cross-linked surface layer, the layers sequentially laminated on the electroconductive substrate,

wherein the cross-linked surface layer comprises:

a cross-linked and cured tri- or more-functional radical polymerizable monomer without having a charge transporting structure; and

a cross-linked and cured mono-functional radical polymerizable compound having a charge transporting structure,

wherein the cross-linked surface layer has thickness of from 1 μm to 10 μm ; and

the cross-linked and cured mono-functional radical polymerizable compound having a charge transporting structure has a functional group selected from the group consisting of an acryloyloxy group, a methacryloyloxy group and a vinyl group.

Claim 18 (Original) An electrophotographic photoconductor according to Claim 17, wherein the thickness is from 2 μm to 8 μm .

Claim 19 (Original) An electrophotographic photoconductor according to Claim 17, wherein the cross-linked surface layer is insoluble in an organic solvent.

Claim 20 (Original) An electrophotographic photoconductor according to Claim 17, wherein the cross-linked and cured tri- or more-functional radical polymerizable monomer without having a charge transporting structure has a functional group selected from the group consisting of an acryloyloxy group and a methacryloyloxy group.

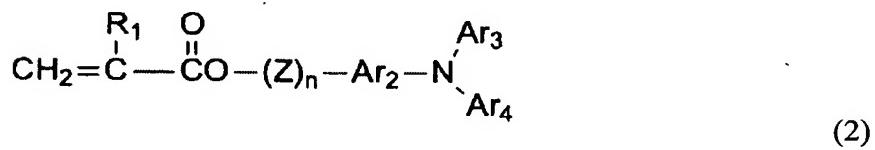
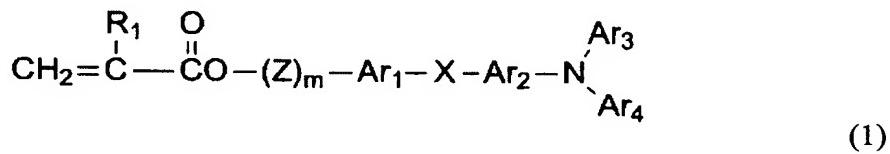
Claim 21 (Original) An electrophotographic photoconductor according to Claim 17, wherein the cross-linked and cured tri- or more-functional radical polymerizable monomer

without having a charge transporting structure has a ratio (molecular weight/number of functional group) of molecular weight to the number of functional group of 250 or less.

Claim 22 (Cancelled).

Claim 23 (Original) An electrophotographic photoconductor according to Claim 17, wherein the charge transporting structure of the cross-linked and cured mono-functional radical polymerizable compound having a charge transporting structure is a triarylamine structure.

Claim 24 (Currently Amended) An electrophotographic photoconductor according to Claim 17, wherein the cross-linked and cured mono-functional radical polymerizable compound having a charge transporting structure is represented by one of the formulae (1) and (2):



wherein, R₁ represents a hydrogen atom or a methyl group, a halogen atom, an alkyl group which may be substituted, an aralkyl group which may be substituted, an aryl group which may be substituted, a cyano group, a nitro group, an alkoxy group, -COOR₇(R₇

~~represents a hydrogen atom, an alkyl group which may be substituted, an aralkyl group which may be substituted or an aryl group which may be substituted), a halogenated carbonyl group or CONR₈R₉ (R₈ and R₉ represent a hydrogen atom, a halogen atom, an alkyl group which may be substituted, an aralkyl group which may be substituted or an aryl group which may be substituted, which may be identical or different);~~

Ar₁ and Ar₂ represent a substituted or unsubstituted arylene group, which may be identical or different;

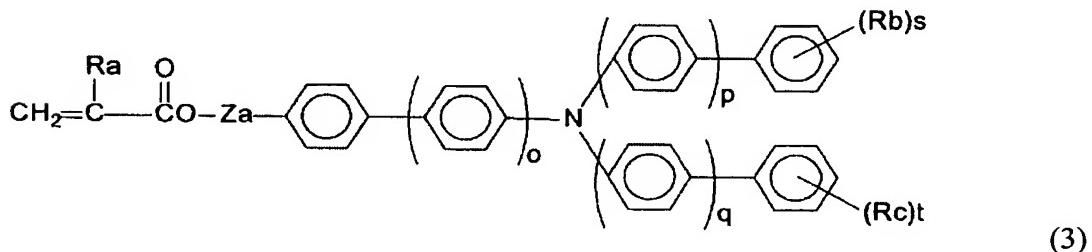
Ar₃ and Ar₄ represent a substituted or unsubstituted aryl group, which may be identical or different;

X represents a single bond, a substituted or unsubstituted alkylene group, a substituted or unsubstituted cycloalkylene group, a substituted or unsubstituted alkylene ether group, a oxygen atom, a sulfur atom or a vinylene group;

Z represents a substituted or unsubstituted alkylene group, a substituted or unsubstituted alkylene ether group or an alkyleneoxycarbonyl group; and

"m" and "n" represent an integer of 0 to 3.

Claim 25 (Currently Amended) An electrophotographic photoconductor according to Claim 17, wherein the cross-linked and cured mono-functional radical polymerizable compound having a charge transporting structure is represented by the following formula (3):



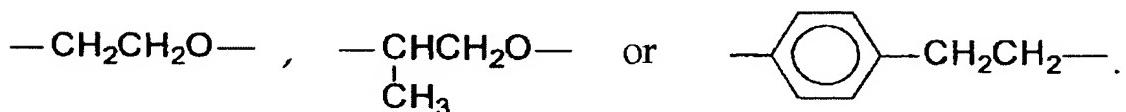
wherein, "o," "p" and "q" each represent an integer of 0 or 1;

R_a represents a hydrogen atom, atom or a methyl group;

R_b and R_c represent an alkyl group having 1 to 6 carbon atoms, wherein each of R_b and R_c may be different when there are two or more R_b and R_c, respectively;

"s" and "t" represent an integer of 0 to 3; and

Z_a represents a single bond, a methylene group, an ethylene group,



Claim 26 (Original) An electrophotographic photoconductor according to Claim 17, wherein the cross-linked and cured tri- or more-functional radical polymerizable monomer without having a charge transporting structure is 30% to 70% by weight, based on the total amount of the cross-linked surface layer.

Claim 27 (Original) An electrophotographic photoconductor according to Claim 17, wherein the cross-linked and cured mono-functional radical polymerizable compound having a charge transporting structure is 30% to 70% by weight, based on the total amount of the cross-linked surface layer.

Claim 28 (Original) An electrophotographic photoconductor according to Claim 17, wherein the charge transport layer comprises a polymer charge transport material.

Claim 29 (Original) An electrophotographic photoconductor according to Claim 28,

wherein the polymer charge transport material is a polycarbonate having a triarylamine structure in the main chain or side chain thereof.

Claim 30 (Original) An electrophotographic photoconductor according to Claim 17, wherein the cross-linked surface layer is cured by one of heating and light irradiation.

Claim 31 (Original) An electrophotographic photoconductor according to Claim 17, wherein the cross-linked surface layer has an elastic displacement rate τ_e of 35% or more and a standard deviation of the elastic displacement rate τ_e of 2% or less.

Claim 32 (Currently Amended) A process for forming an image, comprising:
charging an electrophotographic photoconductor;
exposing the electrophotographic photoconductor which is charged to a recording light so as to form an electrostatic latent image;
developing the electrostatic latent image by a developing agent so as to visualize the electrostatic latent image and form a toner image; and
transferring the toner image formed by developing onto a transfer material,
wherein the electrophotographic photoconductor comprises:
an electroconductive substrate; and
a photoconductive layer on or above the electroconductive substrate, the photoconductive layer comprising:
a cross-linked surface layer which comprises:
a cured tri- or more-functional radical polymerizable monomer without having a charge transporting structure; and
a cured mono-functional radical polymerizable compound having a charge

transporting structure,

wherein the cross-linked surface layer has an elastic displacement rate τ_e of 35% or more and a standard deviation of the elastic displacement rate τ_e of 2% or less; and
the cured mono-functional radical polymerizable compound having a charge transporting structure has a functional group selected from the group consisting of an acryloyloxy group, a methacryloyloxy group and a vinyl group.

Claim 33 (Currently Amended) A process for forming an image, comprising:
charging an electrophotographic photoconductor;
exposing the electrophotographic photoconductor which is charged to a recording light so as to form an electrostatic latent image;
developing the electrostatic latent image by a developing agent so as to visualize the electrostatic latent image and form a toner image; and
transferring the toner image formed by developing onto a transfer material,
wherein the electrophotographic photoconductor comprises:
an electroconductive substrate;
a charge generation layer;
a charge transport layer; and
a cross-linked surface layer, the layers sequentially laminated on the electroconductive substrate,
wherein the cross-linked surface layer comprises:
a cross-linked and cured tri- or more-functional radical polymerizable monomer without having a charge transporting structure; and
a cross-linked and cured mono-functional radical polymerizable compound having a charge transporting structure,

wherein the cross-linked surface layer has thickness of from 1 μm to 10 μm ; and
the cross-linked and cured mono-functional radical polymerizable compound having a charge transporting structure has a functional group selected from the group consisting of an acryloyloxy group, a methacryloyloxy group and a vinyl group.

Claim 34 (Currently Amended) An apparatus for forming an image, comprising:
an electrophotographic photoconductor;
a charger to charge the electrophotographic photoconductor;
an exposer to expose the electrophotographic photoconductor charged by the charger to a recording light to form an electrostatic latent image;
a developing unit to supply a developing agent to the electrostatic latent image to visualize the electrostatic latent image and form a toner image; and
a transferring unit to transfer the toner image formed by the developing unit on a transfer material,
wherein the electrophotographic photoconductor comprises:
an electroconductive substrate; and
a photoconductive layer on or above the electroconductive substrate, the photoconductive layer comprising:
a cross-linked surface layer which comprises:
a cured tri- or more-functional radical polymerizable monomer without having a charge transporting structure; and
a cured mono-functional radical polymerizable compound having a charge transporting structure,
wherein the cross-linked surface layer has an elastic displacement rate τ_e of 35% or more and a standard deviation of the elastic displacement rate τ_e of 2% or less; and

the cured mono-functional radical polymerizable compound having a charge transporting structure has a functional group selected from the group consisting of an acryloyloxy group, a methacryloyloxy group and a vinyl group.

Claim 35 (Currently Amended) An apparatus for forming an image, comprising:
an electrophotographic photoconductor;
a charger to charge the electrophotographic photoconductor;
an exposer to expose the electrophotographic photoconductor charged by the charger to a recording light to form an electrostatic latent image;
a developing unit to supply a developing agent to the electrostatic latent image to visualize the electrostatic latent image and form a toner image; and
a transferring unit to transfer the toner image formed by the developing unit on a transfer material,
wherein the electrophotographic photoconductor comprises:
an electroconductive substrate;
a charge generation layer;
a charge transport layer; and
a cross-linked surface layer, the layers sequentially laminated on the electroconductive substrate,
wherein the cross-linked surface layer comprises:
a cross-linked and cured tri- or more-functional radical polymerizable monomer without having a charge transporting structure; and
a cross-linked and cured mono-functional radical polymerizable compound having a charge transporting structure,
wherein the cross-linked surface layer has thickness of from 1 μm to 10 μm ; and

the cross-linked and cured mono-functional radical polymerizable compound having a charge transporting structure has a functional group selected from the group consisting of an acryloyloxy group, a methacryloyloxy group and a vinyl group.

Claim 36 (Currently Amended) A process cartridge for an image forming apparatus, comprising:

an electrophotographic photoconductor; and

at least one selected from the group consisting of:

a charger to charge the electrophotographic photoconductor;

a developing unit to supply a developing agent to an electrostatic latent image formed by exposure on the electrophotographic photoconductor to visualize the electrostatic latent image and form a toner image;

a transferring unit to transfer the toner image formed by the developing unit on a transfer material;

a cleaning unit to remove toner remaining on the electrophotographic photoconductor after transferring; and

a discharging unit to remove the latent image on the photoconductor after transferring so as to form a monolithic structure,

wherein the process cartridge is adapted to be attached to and detached from a main body of the image forming apparatus, and

the electrophotographic photoconductor comprises:

an electroconductive substrate; and

a photoconductive layer on or above the electroconductive substrate, the photoconductive layer comprising:

a cross-linked surface layer which comprises:

a cured tri- or more-functional radical polymerizable monomer without having a charge transporting structure; and

a cured mono-functional radical polymerizable compound having a charge transporting structure,

wherein the cross-linked surface layer has an elastic displacement rate τ_e of 35% or more and a standard deviation of the elastic displacement rate τ_e of 2% or less; and

the cured mono-functional radical polymerizable compound having a charge transporting structure has a functional group selected from the group consisting of an acryloyloxy group, a methacryloyloxy group and a vinyl group.

Claim 37 (Currently Amended) A process cartridge for an image forming apparatus, comprising:

an electrophotographic photoconductor; and

at least one selected from the group consisting of:

a charger to charge the electrophotographic photoconductor;

a developing unit to supply a developing agent to an electrostatic latent image formed by exposure on the electrophotographic photoconductor to visualize the electrostatic latent image and form a toner image;

a transferring unit to transfer the toner image formed by the developing unit on a transfer material;

a cleaning unit to remove toner remaining on the electrophotographic photoconductor after transferring; and

a discharging unit to remove the latent image on the photoconductor after transferring so as to form a monolithic structure,

wherein the process cartridge is adapted to be attached to and detached from a main

body of the image forming apparatus, and

the electrophotographic photoconductor comprises:

an electroconductive substrate;

a charge generation layer;

a charge transport layer; and

a cross-linked surface layer, the layers sequentially laminated on the electroconductive substrate,

wherein the cross-linked surface layer comprises:

a cross-linked and cured tri- or more-functional radical polymerizable monomer without having a charge transporting structure; and

a cross-linked and cured mono-functional radical polymerizable compound having a charge transporting structure,

wherein the cross-linked surface layer has thickness of from 1 μm to 10 μm ; and

the cross-linked and cured mono-functional radical polymerizable compound having a charge transporting structure has a functional group selected from the group consisting of an acryloyloxy group, a methacryloyloxy group and a vinyl group.